

VISIT...

LANZAROTE
Caliente.COM

What *is* computer-aided estimating?

A better question might be: When is a computer generated estimate really an estimate?

Is it important to understand the strategies used to ‘build’ a computer-aided estimate? Yes. The industry neither has a standard definition for an estimate, nor standards by which to measure what an “estimating” program provides.

Do you understand what ‘intelligent simulation’ means in relation to estimating software? Or what ‘standards’ implies? Or that quoting software differs from estimating software? If not, then selecting software for your estimating can be like buying a pig in a poke.

With computer-aided estimating systems today, the user has a wide choice -- capability wise. Know that when people talk about estimating software, typically they refer to one of two groups of software:

- Software which simply assists the shop owner to determine a price. The estimator manually calculates or *guesses the time* it will take. This is a computer prepared *quote*.
- Other software provides, in addition to quoting, estimates of actual times the job will require in the shop. When the computer *estimates the times*, this a computer generated *estimate*.

Time is the differentiator that makes it simple to differentiate between quoting and estimating software.

Within the estimating classification, some software systems are standards-based, some are engineering-based, some exhibit genuine intelligence, and others are evolving from one form toward another.

When we talk about specific, historic system-designs used for estimating software, we can classify them in this manner. However, since the mid-nineties an evolutionary process has been underway, and the lines between standards-based estimating and engineering-based estimating are blurring. Similarly at the upper end, where we find “non-intelligent” and “intelligent” estimating systems.

Standards-based: Standards-based estimating, while similar to quoting, can take more time for initial setup, and may require the user either to enter the standards or to update those provided to reflect the shop’s actual operations. Often this software already has the standards included. In estimating, there can be no industry-wide standards -- only company standards. Companies which purchase standards-based systems will want the ability to quickly and easily change any standard.

Some standards-based software is evolving toward the engineering based systems and may already include one or more sophisticated modules for hole making, milling, and perhaps a range of other operations. They employ sophisticated formulae to compute the time required for a procedure — mill a pocket, or drill a hole, but may lack a concept of machine movement and operations.

Engineering-based estimating: Compared to standards-based estimating, engineering-based is more comprehensive, and more accurate. The engineering-based computer-aided estimating system mimics the correct manual estimating method, using the same equations. They use the same formulae used when manual estimators need a precise cost. These formulae are unchangeable, based on the laws of mechanics. Given a drill diameter and style, the depth of hole, the material, and the machine doing the drilling, there can be only one correct time. The formula

to derive that time never changes. Feed rates and surface footage-rates may change; once those rates are set, the math is constant. The same is true of idle times. For different machines, the rate may differ, but the movements are the same.

To be perfectly accurate, an engineering-based estimating program will provide speeds and feeds data for every material, rather than assigning them on the basis of material *groups*, which sacrifices accuracy. If such a design permits the user to add speeds and feeds based upon experience and need, this shortcoming will not exist.

Intelligently simulated estimates: An approach based upon intelligent simulation will improve upon the engineering-based results. Intelligent simulation attempts to determine how long each operation *really* will take as opposed to how long it should take.

Having the capability to account for issues like rapid travel and idle times defines the difference between the engineering-based and the engineering-based, intelligent simulation estimating systems.

When it comes to estimating, you don't care that it *should* take one minute -- you need to know how long it *will* take. In an estimate simulation, the software attempts to include everything significant that occurs, as opposed to what should happen. The simulation process must factor into its calculations many issues: How many types of machines are used today by shops? How many different styles? How many different vendors? Rather than providing generic standards for turning or drilling, intelligent simulation will recognize perhaps 60 independent machine types for those processes.

The important fact to remember, when buying estimating software, is that each time you send a quote to a customer, you are betting your business on the accuracy of the times in the estimate.

#